CLEAN COPY OF THE CURRENT CLAIMS

22. A low dielectric constant material, comprising:

a first backbone having a first aromatic moiety comprising a phenyl and a first reactive group;

a second backbone having a second aromatic moiety comprising a phenyl and a second reactive group, wherein the first and second backbones are crosslinked without an exogenous crosslinker via the first and second reactive groups in a crosslinking reaction; and

a cage structure covalently bound to at least one of the first and second backbones, wherein the cage structure comprises at least 10 atoms, and wherein at least one of the first and second reactive groups is ethynyl.

23. The low dielectric constant material of claim 22 wherein the cage structure comprises at least one of an adamantane and a diamantane.

24. A layer comprising said low dielectric constant polymer of claim 21.

25. Cancel.

26. (Amended) The layer of claim [25] 23 wherein said cage structure comprises substituted or unsubstituted adamantane or substituted or unsubstituted diamantane.

27. A film comprising said low dielectric constant polymer of claim 21.

28. The film of claim 27 wherein the thickness of the film is less than 100μm.

29. The film of claim 28 wherein the dielectric constant is less than 3.

30. Cancel.

31. (Amended) The film of claim [30] 27 wherein said cage structure comprises substituted or unsubstituted adamantane or substituted or unsubstituted diamantane.

32. An insulator comprising said low dielectric constant polymer of claim 21.

33. Cancel.

34. (Amended) The insulator of claim [33] 32 wherein said cage structure comprises substituted or unsubstituted adamantane or substituted or unsubstituted diamantane.

35. An integrated circuit comprising the layer of claim 26.

36. An integrated circuit comprising the film of claim 31.

37. An integrated circuit comprising the insulator of claim 34.